

THE NOMENCLATURE OF THE GENUS *BEGONIA*

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This is a review and interpretation of the portions of the International Codes of Nomenclature applicable to the names of the genus *Begonia*. Special emphasis is given to the names of hybrids and cultivars.

The rules for naming plants are set forth in *The International Code of Botanical Nomenclature 1972* (ICBN). This Code governs the use of botanical names primarily of wild plants, and names in Latin of cultivated plants, and has a special section, Appendix I, for the names of hybrids.

The names of plants in cultivation with emphasis on natural and artificially created hybrids are governed by *The International Code of Nomenclature for Cultivated Plants 1969* (ICNCP).

These nomenclature Codes were evolved by the diligent work of many experts and, while there is general agreement in the interpretations of their rules, there is no unanimity on all details. There even are some contradictions within the Codes and between them, particularly concerning collective epithets and nothomorphs. I have tried to make those interpretations that will best avoid confusion and provide stability with *Begonia* names.

The orthography and style of writing the names cited have been corrected as required by the rules of *The International Code of Botanical Nomenclature*. The original spelling or style used by the author is within parentheses following the corrected name.

DEFINITIONS

Species is the basic rank for the classification of wild plants. The characteristics of the individuals of this category, while variable, are still within recognizable limits that distinguishes them from all other units within a genus.

Plants of a species, including those of its infraspecific ranks, that are *selfed* (the pollen of a male flower applied to the stigma of a female flower

of the same species) produce offspring that are *true* (have characteristics within the same recognizable limits that distinguish the species). These offspring are not considered hybrids and are treated nomenclaturally at the same rank as their parents.

A *variety* is a subdivision of a species, with some minor characteristics that differ from other members of the species.

A *form* is a subdivision of a variety or species that differs from the other members usually by one characteristic.

A *hybrid* is the offspring of the sexual union of plants belonging to different *taxa* (taxonomic groups). The various derivatives from the same parents, or multiple parents of the same two taxa, are designated collectively as a hybrid population, hybrid group, or *grex* (flock).

A *nothomorph* is a botanical designation for wild or cultivated variant of an interspecific hybrid.

A *cultivar* is a selected *cultivated variety* of a plant (either species or hybrid), that is clearly distinguished by any character that is retained when it is reproduced, either sexually or asexually.

HIERARCHY

"Every individual plant is treated as belonging to a number of taxa of consecutively subordinate rank."

The *hierarchy* (all the categories of taxa arranged in order according to their ranks) for the names of *Begonia* (based on the Tippe system of classification) is the same for all plants through the rank of genus as follows:

<u>RANK</u>	<u>NAME</u>
Division	Tracheophyta
Subdivision	Pterospermae
Class	Angiospermae
Subclass	Dicotyledoneae
Order	Begoniales
Family	Begoniaceae
Genus	<i>Begonia</i>

Subordinate to the rank of Genus, the categories are different for a species, hybrid or cultivar.

SPECIES NAMES

For a species, the *infrageneric categories* are the ranks subordinate to Genus down to the rank of Species and may be: Subgenus, Section, Subsection, Series, Subseries. Of these, for *Begonia*, only the rank of Section has been used.

Intraspecific categories are the ranks subordinate to Species and may be Subspecies, Variety, Subvariety, Form and Subform. For *Begonia*, the ranks of Subvariety and Subform have not been used and Subspecies has been used very infrequently.

As an example, the hierarchy of the species *Begonia (Lepsia) foliosa* var. *miniata* would be as follows:

<u>RANK</u>	<u>NAME</u>
Genus	<i>Begonia</i>
Section	<i>Lepsia</i>
species	<i>foliosa</i> (specific epithet)
Variety	<i>miniata</i> (varietal epithet)

A name at the rank of Form may be used in addition to (or instead of) a name at varietal rank.

These names in Latin are printed in a type face that stands out from the rest of the text; frequently this is accomplished by the use of italic type, (or of underlining in typescript). The genus and section names are capitalized, the others are lower-cased. A specific or infraspecific epithet derived directly from the name of a person, may, under the ICBN, be capitalized. For uniformity, I prefer always to use lower case as recommended by the ICBN.

The names of the species may be written *Begonia (Lepsia) foliosa* HBK, but frequently, the section name, *Lepsia*, is omitted.

For accuracy as a bibliographical reference and for full identification, the name or abbreviated name of the author(s) who first validly published the species name is added after the specific epithet: e.g., *Begonia foliosa* HBK (abbreviation for Humboldt, Bonpland & Kunth).

But when the name of a variety is added, the name of the author(s) of the variety must be added, and the author (HBK) of the species epithet may be omitted, e.g., *Begonia foliosa* var. *miniata* Smith & Schubert.

Names at the rank of species, variety and form are used only for naturally occurring plants collected in the wild. But selected distinctive variants of these occurring in cultivation may be given a cultivar name.

HYBRID NAMES

Hybrids are assigned to taxa of two principal ranks, intergeneric [hybrid] and interspecific [hybrid].

An *intergeneric hybrid* is a hybrid between species of two or more genera and has the rank equivalent to genus. I do not know of any intergeneric hybrids of the Family Begoniaceae, so we are not concerned here with this category.

An *interspecific hybrid* is a hybrid between species (taxa of species rank) of the same genus, and has the same rank as species. I suggest the substitution of "taxa of species rank" for "species" in this definition because the ICBN provides that a hybrid has the same rank as its highest ranking parent. Therefore, an interspecific hybrid can be the derivative of a cross, not only between two species (e.g., *Begonia crispula* X *Begonia dregei*), but also between a hybrid and a species (e.g., *Begonia Xfuscomaculata* X *Begonia heracleifolia*), or between a species and a hybrid cultivar (e.g., *Begonia hydrocotylifolia* X *Begonia* 'Lenore Olivier').

BOTANICAL DESIGNATIONS OF HYBRIDS

Before the establishment of the ICBN, there was no universally accepted style for writing the names of hybrids. Many authors, as was the custom in their time wrote the hybrid names in Latin and did not distinguish them from the names of species.

The botanical names in Latin form for interspecific hybrids and their derivatives are now governed by the ICBN. Such hybrids are designated either by a formula or a name.

A formula consists of the names of the two parents connected by the multiplication sign (X) (e.g., *Begonia olsoniae* Smith & Schubert X *Begonia sutherlandii* Hooker f.) or the name of the genus followed by the specific epithets of the two parents connected by the same sign (e.g., *Begonia olsoniae* X *sutherlandii*). A formula is a statement of parentage; it clearly designates the entire hybrid population.

The sequence of the names or epithets in a formula may be either alphabetical or with the name or epithet of the female parent first, when it is known. With these optional methods of listing the parents it is not possible to be certain which is the female parent unless it happens to start with a higher initial letter. The ICBN also specifies that all derivatives from the same two species are designated by the same formula (even though the male and female parents are interchanged). For example, with the female parent listed first, the formula for cultivar *Begonia* 'Emeraude' is *Begonia boliviensis* X *veitchii*, and for the cultivar *Begonia* 'Topaze', it would be *Begonia veitchii* X *boliviensis*. But they are derived from the same two species and must be designated by the same formula, making it impossible to list the female parent first for one of them. It is more logical and less confusing always to list the parents alphabetically.

The name of an interspecific hybrid is a binomial consisting of the name of the genus and a multiplication sign (X) preceding a single (one word) epithet; e.g., *Begonia Xweltonensis* J. B. Weber. This is the botanical name of the hybrid and must conform to the rules of the ICBN. When botanical names are used in naming hybrids, all descendants of crosses between individuals of the same parent species should have this same name. So the epithet would be considered the collective designation for the entire hybrid population and all the individuals within it.

But this is confusing if applied retroactively to the older botanical hybrid names. These epithets apparently were often based by their authors on one distinctive plant and primarily are used to designate only that individual. When these basic botanical hybrid names are alone (without the additions of a cultivar epithet) they often are used as the designation for the individual.

Some typical examples of basic botanical hybrid names are:

Begonia Xantonietae Brade, *Rodriguesia* 32:165, t7.
1957 (*X Begonia Antonietae*)

Begonia Xerythrophylla Herincq, *Rev. Hortic. Ser 3*,
1:111. 1847 (*Begonia erythrophylla*)

Begonia Xingramii Moore, *Gard. Mag. Bot.* 2: 153,t,
1850. (*Begonia Ingramii*)

Begonia Xweltonensis J. B. Weber, *Rev. Hortic.* 47:105,
1875. (*Begonia Weltoniensis*)

FORMULAS, NOT EPITHETS

Designations consisting of the epithets of the parents combined in unaltered form by a hyphen, or with the termination of only one epithet changed, are considered to be formulas and not true epithets e.g., *Begonia peltato-sanguinea* A. Dietrich, *Alleg. Gartenz.* 15:283, 1847 which is not a true epithet but must be considered to be a formula meaning *Begonia peltata* Otto & Dietrich X *Begonia sanguinea* Raddi. *Begonia manicata-dipetala* Berol. is not a true epithet and must be considered to be a formula meaning *Begonia manicata* Brongniart X *Begonia dipetala* Graham. The correct binary name for this hybrid is *Begonia Xwarscewitzi* Herincq.

NOTHOMORPH

Nothomorph is a variant of an interspecific hybrid, that occurs either in the wild or in cultivation. It is designated by a botanical epithet in Latin and is subject to the rules of the ICBN. It has the same relation to a hybrid name that variety and form have to a species name.

Nothomorph is not the same as the category cultivar, which designates only cultivated variants.

An author has the option of designating a cultivated variant of a hybrid, either as a nothomorph by complying to the rules of the ICBN, or as a cultivar per the rules of ICNCP.

Under the ICBN, epithets subordinate to the binary name of a hybrid published before 1 Jan. 1975 at the other ranks (e.g., variety or form, which are to be used only for variants of natural species) are to be changed to the rank of nothomorph. e.g., *Begonia Bunchii* was described in 1914 by L. H. Bailey (Standard Cyclopaedia of Horticulture) as a form of *Begonia Xfeastii* (*Feastii*) (a synonym of *B. Xerythrophylla* Herincq). The rank of variety or form must be transferred to nothomorph: *Begonia Xerythrophylla* nm. *bunchii* pro. var.

The hierarchy of the hybrid *Begonia Xerythrophylla* nm. *bunchii* is:

<u>RANK</u>	<u>NAME</u>
Genus	<i>Begonia</i>
Species (Interspecific hybrid)	<i>erythrophylla</i>
Nothomorph	<i>bunchii</i>

CULTIVAR NAMES

The full name of a cultivar consists of the botanical or common name at species rank and the cultivar epithet.

Cultivar epithets designate different cultivated variations of a population.

Since 1959, cultivar epithets are fancy names in modern language, markedly different from botanical epithets in Latin. The fancy name is distinguished clearly from the botanical or common name, either by placing the abbreviation cv. before it, or by enclosing it within single quotation marks, and by capitalizing each word of the epithet:

Begonia Xfuscomaculata cv. Reichenheim
Begonia crispula X *dregei* 'Crispie'
Begonia olsoniae X *sutherlandii* cv. Victoria Kartack

A cultivar epithet can be established by publishing in conformance with the rather simple rules of the ICNCP, or by the acceptance of the cultivar name by a registration authority and the inclusion of that name in a register. The international registration authority for *Begonia* is the American Begonia Society. Registration is not mandatory but is highly recommended.

Article 19 of the ICNCP states that a plant of an interspecific hybrid, when introduced into cultivation, must be given a cultivar name in addition to the collective epithet or formula, even if only one cultivar is known.

A formula is clearly a collective designation for the entire hybrid population so it is logical to designate selected individuals from this population by a cultivar epithet e.g.,

Begonia hydrocotylifolia X 'Lenore Olivier' cv. Clara
Elizabeth
Begonia hydrocotylifolia X 'Lenore Olivier' Gertrude
Nelson

As noted above, botanical hybrid names have been used to designate the individual upon which the author based the name. But by the addition of a cultivar epithet to a basic botanical hybrid name, it is transferred to a collective name for the entire hybrid population.

For example, John Seden crossed *Begonia veitchii* Hooker f. with *Begonia boliviensis* A. DC. One of the progeny was described and illustrated in Veitch's Catalogue of Plants: 2, fig, 1872 and given the name *Begonia Xintermedia*. This basic name *Begonia Xintermedia* is used to designate the individual plant described by Veitch.

From the same two species, L. Van Houtte developed hybrids that were described by him in Flores des Serres 19:26, 1873. They were given the French epithets *Emeraude* and *Topaze*. Since they are selected cultivated variants derived from the same two species, they take the same (now a collective) name *Begonia Xintermedia* plus a cultivar epithet, i.e. *Begonia Xintermedia* 'Emeraude' and *Begonia Xintermedia* 'Topaze'.

G. Legros in Revue Horticole, 66:247, t93 & t94, 1894, described and illustrated a *Begonia* with the epithet *Bertinii* (*Bertini*), but he did not know its origin. In an article, "L'origine du *Begonia Bertinii*" (*Bertini*) in Revue Horticole, 66:294, 1894, Monsieur Lemaitre explained "The *Begonia Bertinii* (*Bertini*) is a cross-breeding of *veitchii* and *boliviensis*...." Therefore, this is also designated as a

cultivar, *Begonia Xintermedia* 'Bertinii'.

The example after Article 15 ICNCP implies that cultivar names can be abbreviated by the deletion of the epithet at species rank. For precision, when a cultivar epithet is appended to a botanical name, I recommend that the full name be used. For example, if the cultivar name *Begonia Xerythrophylla* 'Helix' was abbreviated, it would become *Begonia* 'Helix' and lose its identity as a cultivar of the interspecific hybrid *Begonia Xerythrophylla*.

COMMON NAMES

The common name for members of the genus *Begonia* in English is begonia. Various begonias have been given common names such as wax begonia, trout begonia and angel wing begonia. The same common name is often used for various plants, or the same plant may have different common names. It is best not to use common names to identify *Begonia*.

GROUP DESIGNATIONS

In addition to the designations of groups by botanical collective epithets, e.g., *Begonia Xcheimantha* Everett, *Begonia Xhiemalis* Fotsch, *Begonia Xtuberhybrida* Voss, - a collective epithet may also be a word or phrase of not more than three words, in a modern language. Normally all derivatives from the same parental combination have the same collective epithet in a modern language, but custom has also established the use of these collective epithets to designate groups of *Begonia* with common horticultural characteristics.

Typical names of this type are:

Begonia Rex-Cultorum Hybrids
Begonia Semperflorens-Cultorum Hybrids
Begonia Tuberhybrida Hybrids

Other group designations are horticultural classifications used as convenient headings in books, catalogues, or to classify similar types of plants in a flower show. Typical groups of this type are: rhizomatous, stemmed, tuberous, semituberous, cane-like, shrub-like, etc.

These do not have any rank in the hierarchy of plant names and are not regulated by either Code. No attempt is made here to list all the potential group and subgroup designations, these are determined and used by other authors for their particular purposes.

ANNOTATED RULES FOR BOTANICAL NAMES OF HYBRIDS

Under Article 40 (ICBN), to be validly published, names of hybrids of specific or lower rank with Latin epithets must comply with the same rules as those for names of nonhybrid taxa of the same rank. These rules are:

1. The names must be effectively published by the general distribution of printed matter, or at least to botanical institutions with libraries accessible to botanists (Art. 29 ICBN). Publication by indelible autograph (handwritten text that cannot be rubbed out), in a tradesman's catalogue, in nonscientific newspapers, and by printed matter accompanying exsiccata (dried specimens) is considered effective if it was before 1 Jan. 1953. Publication in a seed exchange list is effective before January 1973.

2. To be validly published, a name of a new plant taxon must be accompanied by a Latin description or diagnosis or by reference to a previously and effectively published Latin description or diagnosis of the taxon (Art. 36 ICBN).

Exceptions: (a) names published before 1 Jan. 1935 with a description or diagnosis in other languages. (b) a name published before 1 Jan. 1908 accompanied only by an illustration with analysis showing essential characters.

3. Publication of the name of a new taxon is valid only when the nomenclatural type is indicated [Art. 37 ICBN], except for names published before 1 Jan. 1958.

4. For the name of the taxon to be accurate and complete, it is necessary to cite the name of the author(s) (Art. 46 ICBN).

Under Article 50 of ICBN "When the status of a taxon bearing a binary name is altered from species to interspecific hybrid, or vice versa, the name of the original author must be cited, followed by an indication in parenthesis of the original status. A similar indication of original status must be given, when an infraspecific taxon is altered in status to nothomorph, or vice versa. If it is desirable or necessary to abbreviate such a citation, the indication of original status may be omitted (and usually is)."

For example, *Begonia ricinifolia* A. Dietrich (pro. sp.) was originally published as a species (Allg. Gartenz. 15:282, 1847) but was later determined to be a hybrid (Klotzsch, Begoniaceen: 95, 1855). *Begonia Xweltonensis* nm. *alba* hort. (pro. var.): originally *alba* was published as a variety of *Begonia Xweltonensis* but in accordance with the current rules, it is cited as a nothomorph.

ANNOTATED RULES FOR CULTIVAR NAMES

A cultivar epithet published on or after 1 Jan. 1959 must be a fancy name, except a valid botanical epithet in Latin form for a plant subsequently considered to be a cultivar is to be retained. But, it must be distinguished in the same way as a fancy name by being written in a different type than that used for species names (this is usually roman type), with the initial letter capitalized, and separated from the botanical name by the use of single quotes or the abbreviation cv.

Any cultivar name is legitimate when established in accordance with the articles of the ICNCP, or established by legal process, such as by entry in a statutory register (Art. 33).

Before 1 Jan. 1959, to be legitimate, a name must be published in printed matter distributed to the public (Art. 37). The name must be approved by the originator of the cultivar, or his assignee (Art. 41). The name must be for a cultivar that does, or did, exist (Art. 42).

After 1 Jan. 1959, to be legitimate, a cultivar name must also be:

Published in printed matter dated at least as to the year (Art. 38).

Accompanied by a description, or by reference to a previously published description as a cultivar or in any botanical category (Art. 39).

SUMMARY

Stability in the names of hybrids and cultivars of *Begonia* can be best maintained by observing the following recommendations:

Formulae should be used as collective designations:

Begonia olsonia X *sutherlandii* 'Victoria Kartack'
Begonia dregei X 'Lenore Olivier' cv. Nancy Gail

Botanical names in Latin form based on an individual maybe the designation for that individual, except when followed by a cultivar epithet.

Begonia Xerythrophylla Herincg
Begonia Xfuscomaculata A. Lange
Begonia Xingramii Moore
Begonia Xweltonensis J. B. Weber

The botanical rank, nothomorph, should be used for variants of a basic interspecific hybrid.

Begonia Xerythrophylla nm. *bunchii* Bailey
Begonia Xweltonensis nm. *alba* hort.

Cultivar epithets designate the selected cultivated variants from a population, e.g., the following cultivars were all derived from the same parents designated by the formula *Begonia hydrocotylifolia* X 'Lenore Olivier': *Begonia* 'Clara Elizabeth', *Begonia* 'Gertrude Nelson', *Begonia* 'Lil O'Neil', *Begonia* 'Question Mark' and *Begonia* 'Posy Wahl'.

A cultivar name that includes a botanical name should not be abbreviated, e.g., *Begonia Xerythrophylla* 'Helix'.

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